IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) An apparatus for examining a surface, comprising

a polarization analyser element placed in the path of a light beam reflected by the surface the polarization analyser element constructed and arranged to alternately transmit a crossed polarization state and a parallel polarization state;

a digital image acquisition device disposed in the path of the beam reflected by the surface downstream of the polarization analyser element; and

a processing unit capable of calculating the brightness and the intensity of a plurality of points of the surface from pixels of at least two images of the surface;

wherein the apparatus does not contact the surface.

2. (Previously Presented) An apparatus according to Claim 1, further comprising a source of polarized light capable of emitting a beam incident on the surface to be examined.

3. (Previously Presented) An apparatus according to Claim 2, wherein the light emanating from the source is substantially isotropic.

4. (Previously Presented) An apparatus according to Claim 2, wherein the light emanating from the source is substantially white.

5. (Previously Presented) An apparatus according to Claim 2, wherein the spectrum of the light emanating from the source is substantially the same as the solar spectrum.

6. (Previously Presented) An apparatus according to Claim 1, wherein the polarization analyser element comprises a means for transmitting crossed polarization and a means for transmitting parallel polarization, the transmission means being alternatively active.

7. (Previously Presented) An apparatus according to Claim 6, wherein the polarization analyser element is rotatable.

8. (Previously Presented) An apparatus according to Claim 6, the polarization analyser element further comprises an electrical switching means.

9. (Previously Presented) A process for the non-contact examination of a surface, comprising:

(i) analysing crossed and parallel polarizations of a light beam reflected by the surface;

(ii) taking digital images of the crossed and parallel polarizations of the reflected beam; and

(iii) calculating the brightness and the intensity of a plurality of points of the surface from pixels of at least two images of the surface.

10. (Previously Presented) A process according to Claim 9, wherein the surface is uneven.

11. (Previously Presented) A process according to Claim 9, wherein the digital images are monochromatic digital images.

12. (Previously Presented) A process according to Claim 9, wherein the digital images are polychromatic digital images.

13. – 14. (Cancelled).

15. (Previously Presented) An apparatus for examining a surface comprising:

a source of polarized light constructed and arranged to emit a beam incident on the surface to be examined, the spectrum of the light being substantially the same as the solar spectrum;

a polarization analyzer element placed in the path of a light beam reflected by the surface;

digital image acquisition device disposed in the path of the beam reflected by the surface downstream of the polarization analyzer element; and

a processing unit capable of calculating the brightness and the intensity of a plurality of points of the surface from pixels of at least two images of the surface;

wherein the apparatus does not contact the surface.

16. (Previously Presented) An apparatus for examining a surface comprising:

an optical element selected from the group consisting of an orientable polarisation analyser element and a polarizing splitter cube placed in the path of a light beam reflected by the surface;

a camera for taking digital images placed in the path of the beam reflected by the surface downstream of the polarization analyser element; and

a processing unit capable of calculating the brightness and the brightness and the intensity of a plurality of points of the surface from pixels of at least two images of the surface;

wherein the apparatus does not contact the surface.

17. (Previously Presented) An apparatus according to Claim 15 or 16, further comprising a source of polarized light capable of emitting a beam incident on the surface to be examined.

18. (Previously Presented) An apparatus according to Claim 17, wherein the light emanating from the source is substantially isotropic.

19. (Previously Presented) An apparatus according to Claim 15 or 16, wherein the light emanating from the source is substantially white.

20. (Previously Presented) An apparatus according to Claim 15 or 16, wherein the spectrum of the light emanating from the source is substantially the same as the solar spectrum.

21. (Previously Presented) An apparatus according to Claim 15 or 16, wherein the analyser comprises a means for transmitting the crossed polarization and a means for transmitting the parallel polarization, the transmission means being alternatively active.

22. (Previously Presented) An apparatus according to Claim 21, wherein the analyser is rotating.

23. (Previously Presented) An apparatus according to Claim 21, wherein the analyser further comprises an electrical switching means.

24. (Previously Presented) The process of Claim 9, wherein the process is performed by a computer.

25. (Previously Presented) A computer-readable medium bearing a program code embodied thereon for performing the process of Claim 9.

26. (New) An apparatus for examining a surface, comprising:

a polarization analyser element placed in the path of a light beam reflected by the surface, the polarization analyser element constructed and arranged to alternately transmit a crossed polarization state and a parallel polarization state;

a digital image acquisition device disposed in the path of the beam reflected by the surface downstream of the polarization analyser element; and

a processing unit configured and arranged to calculate a brightness and color information for a plurality of points of the surface from pixels of at least two images of the surface;

wherein the apparatus does not contact the surface.